

C L A I M S

1. Fluidized catalytic cracking process which process comprises contacting a hydrocarbon feedstock with a fluidized particulate catalyst in a reaction zone wherein a hydrocarbon product is prepared and wherein coke accumulates on the catalyst to become a spent catalyst and which process comprises of the following steps:
- 5 (a) separating the hydrocarbon product from the spent catalyst by means of one or more gas-solid separation steps;
- 10 (b) stripping the spent catalyst in a dense phase fluidized stripping zone by introducing a stripping medium in the lower portion of the stripping zone;
- 15 (c) introducing part of the spent catalyst obtained in step (b) to a regeneration zone wherein the coke is removed from the catalyst by means of combustion;
- 20 (d) introducing the remaining part of the spent catalyst obtained in step (b) and part of the hot regenerated catalyst obtained in step (c) into a lower portion of an elongated dilute phase stripping zone;
- 25 (e) introducing a stream of a stripping medium into the lower portion of the dilute phase stripping zone to contact the resulting mixture of spent catalyst and regenerated catalyst therein;
- (f) passing a stream of the spent catalyst mixed with the hot regenerated catalyst and stripping medium upwardly in the dilute phase stripping zone under dilute phase stripping conditions to an upper portion thereof;
- 30 (g) separating substantially all of the spent catalyst and regenerated catalyst from the effluent of step (f) and introducing the separated catalyst to the dense phase stripping zone of step (b);

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(h) passing the remaining part of the hot regenerated catalyst obtained in step (c) to the reaction zone to be contacted with the hydrocarbon feedstock. *oh yes*

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2. Process according to claim 1, wherein the temperature in the dense phase stripping zone is between 500 and 600 °C.

10 3. Process according to any one of claims 1-2, wherein the weight ratio of spent catalyst obtained in step (b) which is sent to step (c) and of spent catalyst obtained in step (b) which is used in step (d) is between 1:10 and 10:1.

4. Process according to any one of claims 1-3, wherein the weight ratio of spent catalyst and regenerated catalyst in step (d) is between 1:10 and 10:1.

15 5. Process according to any one of claims 1-4, wherein the separation of step (g) is performed in the gas-solid separation steps of step (a).

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25 6. Fluidized catalytic cracking unit comprising a reactor riser (C) having means to receive a hydrocarbon feedstock (14) and regenerated catalyst (2) and optionally a lift gas (1), a conduit means (3) to send the reactor effluent to a separation means (E), means (4) to send catalyst from separation means (E) to a dense phase stripping zone (D), means (5) to send a hydrocarbon product as separated from the reactor effluent in separation means (E) to a downstream unit operation, supply means (6) to feed a stripping medium to the dense phase stripping zone (D), means (15) to supply the gaseous effluent of the dense phase stripping zone (D) to separation means (E) in order to separate any catalyst particles present in this gaseous effluent, conduit means (7) to send spent catalyst from dense phase stripping zone (D) to the elongated dilute phase stripping zone (B), conduit means (8) to send spent catalyst from dense phase stripping zone (D) to

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5 regeneration zone (A), conduit means (9) to send regenerated catalyst to dilute phase stripping zone (B), supply means (10) to supply a stripping medium to dilute phase stripping zone (B), conduit means (11) to send the effluent of dilute phase stripping zone (B) to separation means (E), supply means (12) to supply an oxygen containing gas to regeneration zone (A) and conduit means (13) for the combustion gases to leave the regenerator.

10 7. Unit as described in claim 6, wherein additional supply means (16) for introducing a hydrocarbon feedstock are present in the lower portion of the elongated dilute phase stripping zone (B).

508 A2 15 > 8. Use of the unit as described in any one of claims 6-7 for a process as described in any one of claims 1 to 5.

9. Use of the unit as described in claim 7 for a process as described in any one of claims 1-5 in alternation with a use of the unit for a process in which the dilute phase stripping zone (B) is used as an additional reaction zone wherein to one reaction zone a mixture of steam and a hydrocarbon feedstock boiling below 300 °C is supplied to.

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